WHAT IS CLAIMED IS:

1. A method for treating a person suffering from head trauma associated with elevated intracranial pressures, the method comprising:

delivering a positive pressure breath to the person;

actively extracting respiratory gases from the person's airway following the positive pressure breath to create an intrathoracic vacuum to lower pressures in the venous blood vessels that transport blood out of the head to thereby reduce intracranial pressures; and

repeating the steps of delivering positive pressure breaths and extracting respiratory gases.

2. A method as in claim 1, wherein the positive pressure breath is delivered using a mechanical ventilator.

3. A method as in claim 1, wherein the respiratory gases are extracted with a constant extraction, varied over time, or a pulsed extraction.

4. A method as in claim 1, wherein the breath is delivered for a time in the range for about 250 milliseconds to about 2 seconds.

5. A method as in claim 1, wherein the breath is delivered at a rate in the range from about 0.1 liters per seconds to about 5 liters per second.

6. A method as in claim 1, wherein the vacuum is maintained at a pressure in the level from about 0 mmHg to about -50 mmHg.

7. A method as in claim 6, wherein the vacuum is maintained with negative flow or without flow.

8. A method as in claim 1, wherein the time the positive pressure breath is supplied relative to the time in which respiratory gases are extracted is in the range from about 0.5 to about 0.1.

9. A method as in claim 1, wherein the respiratory gases are extracted using equipment selected from a group consisting of a mechanical ventilator, a phrenic nerve stimulator, an extrathoracic vest, a ventilator bag, and an iron lung cuirass device.

10. A method as in claim 1, further comprising coupling a threshold valve to the person's airway, wherein the threshold valve is configured to open with the person's negative intrathoracic pressure exceeds about -5 cmH2O.

11. A method as in claim 1, wherein the respiratory gases are lowered to an intrathoracic pressure of about -5 mmHg to about -10 mmHg and then kept generally constant until the next positive pressure breath.

12. A method as in claim 1, wherein the positive breath is slowly delivered and the respiratory gases are rapidly lowered to an intrathoracic pressure of about -10 mmHg to about -20 mmHg and then gradually reduced towards about 0 mmHg.

13. A method as in claim 1, wherein the respiratory gases are slowly lowered to a pressure of about -20 mm Hg.

14. A method for treating a person suffering from head trauma associated with elevated intracranial pressures, the method comprising:

coupling a mechanical ventilator to a person;

actively delivering a positive pressure breath to the person using the ventilator;

extracting respiratory gases from the person's airway following the positive pressure breath using the mechanical ventilator to create an intrathoracic vacuum to lower pressures in the venous blood vessels that transport blood out of the head to thereby reduce intracranial pressures; and

repeating the steps of delivering positive pressure breaths and extracting respiratory gases.

15. A method as in claim 14, wherein the respiratory gases are extracted with a constant extraction, varied over time, or a pulsed extraction.

16. A method as in claim 14, wherein the breath is delivered for a time in the range for about 250 milliseconds to about 2 seconds.

17. A method as in claim 14, wherein the breath is delivered at a rate in the range from about 0.1 liters per seconds to about 5 liters per second.

18. A method as in claim 14, wherein the vacuum is maintained at a pressure in the level from about 0 mmHg to about -50 mmHg.

19. A method as in claim 18, wherein the vacuum is maintained with negative flow or without flow.

20. A method as in claim 14, wherein the time the positive pressure breath is supplied relative to the time in which respiratory gases are extracted is in the range from about 0.5 to about 0.1.

21. A method as in claim 14, wherein the respiratory gases are extracted using equipment selected from a group consisting of a mechanical ventilator, a phrenic nerve stimulator, a ventilator bag, and an iron lung cuirass device.

22. A method as in claim 14, further comprising coupling a threshold valve to the person's airway, wherein the threshold valve is configured to open with the person's negative intrathoracic pressure exceeds about -5 cmH2O.

23. A method as in claim 14, A method as in claim 1, wherein the respiratory gases are lowered to a pressure of about -10 mmHg and then kept generally constant until the next positive pressure breath.

24. A method as in claim 14, A method as in claim 1, wherein the positive breath is slowly delivered and the respiratory gases are rapidly lowered to a pressure of about -20 mmHg and then gradually reduced towards about 0 mmHg.